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The Ohio Corn Performance Tests: 1943 and 1944

G. H. Stringfield, R. D. Lewis, and H. L. Pfaff

Department of Agronomy
Ohio Agricultural Experiment Station

Cooperating with

9 Ohio seed growers and county seed improvement associations, the Division of Cereal Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture, and The Agricultural Extension Service, The Ohio State University

OHIO AGRICULTURAL EXPERIMENT STATION
WOOSTER, OHIO

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G. H. STRINGFIELD, R. D. LEWIS, AND H. L. PFAFF[1, 2]

INTRODUCTION

This circular presents the sixth report of the Ohio Corn Performance Tests. Each previous report covered a single year's work, the last one being for 1942.[3] The present report summarizes 29 tests in 19 counties for the years 1943 and 1944.

The purpose of the Ohio Corn Performance Tests is to assemble information from various locations in the State on the relative merits of different corn hybrids. Emphasis is placed on hybrids certified in Ohio, new hybrids which are or may become candidates for certification, and other hybrids which are taking places of prominence in Ohio agriculture. This task would be a very satisfying one if it were possible to evaluate and catalogue a collection of corn hybrids as a chemist might evaluate and catalogue a collection of ground limestone samples in terms of neutralizing power. Evaluating corn hybrids in competitive field performance experiments has something in common with athletic contests. The performance of an athlete or of an athletic team at a given time and place is only partly predictable, and the performance of a corn hybrid, given a new lot of seed and a new environment, is only partly predictable. In repeated contests the best athlete or team should win most frequently and so with the best hybrid. We can only present the results as the various hybrids have made them under the testing conditions described in the following paragraphs.

EXPERIMENTAL PROCEDURES

THE FIELD DESIGN

With the exception of the tests reported in tables 12 and 15, an individual test contained 30 entries which were compared in 2- by 10-hill plots replicated 5 times and laid out in a modified Latin square of 5 ranges (30 plots side by side) and 5 columns (6 plots wide by 5 plots long) at right angles to the ranges. Each entry was placed at random once in each range and once in each column. At least 2 border rows were grown along side of each outside plot.

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[1]G. H. Stringfield, Senior Agronomist, Division of Cereal Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, U. S. Department of Agriculture, and Associate in Agronomy, Ohio Agricultural Experiment Station; R. D. Lewis, Chairman, Department of Agronomy, The Ohio State University, Associate in Agronomy, Ohio Agricultural Experiment Station, and Agent, Division of Cereal Crops and Diseases, U. S. Department of Agriculture; H. L. Pfaff, Agent, Division of Cereal Crops and Diseases, U. S. Department of Agriculture, and Crop Breeding Foreman, Ohio Agricultural Experiment Station.

[2]The writers are much indebted to the many farmers and seed growers who generously contributed land, fertilizers, labor, and personal efforts in conducting these tests; to the Division of Plant Industry, State Department of Agriculture, for collecting samples of privately controlled hybrids; to the Ohio Seed Improvement Association for providing composited inspection samples of Ohio Certified hybrids; to the County Agricultural Agents for help in locating cooperators and for many other details; to the assisting personnel at the Experiment Station, The Ohio State University, and the District and County Experiment Farms for necessary help in planting, harvesting, computations, typing, and other details; to C. R. Neiswander, Associate Entomologist, Ohio Agricultural Experiment Station, for consultation and observations on the degree of insect injury in the tests; to D. H. Bowman, Assistant Plant Pathologist, Ohio Agricultural Experiment Station and the United States Department of Agriculture, for consultation and observations on the degree of disease injury in the tests.

[3]Stringfield, G. H., R. D. Lewis, and H. L. Pfaff. 1943. Ohio Corn Performance Tests and Recommendations. Ohio Agricultural Experiment Station Special Circular 66.

RATE OF PLANTING

Four seeds were planted per hill. Thinning to uniform stands was attempted only in the test in Area 7 in 1944.

YIELD ADJUSTMENTS FOR VARIATIONS IN STAND

In 1943 only missing and single-plant hills were considered in adjusting plot yields for differences in stand. The following formula was used:

$$CW = FW \times \frac{H - 0.3\,M}{H - M}, \text{ where:}$$

CW = corrected weight
FW = field weight
H = number of hills per plot
M = number of missing hills

For purposes of this adjustment two single-plant hills were considered equivalent to one missing hill. A plot was discarded if it had more than four missing hills, more than the equivalent of two successive adjoining missing hills, or fewer than 54 plants after adjusting for missing hills.

Because of drouth in 1944 sub-normal stands gave higher rather than lower yields at some locations thus another method of adjustment was used. The 150 plots of a test were classified according to stand into groups having class values of five. Thus, all plots having 60 to 64 plants, inclusive, were put into one group; all plots having 65 to 69 plants were put into the next group; and so on. Within each group the average stand and the average acre grain yield were computed. These average values were plotted on graph paper with stand on the horizontal ordinate and yield on the vertical. Using these points as guides, the trend of yield on stand was plotted with a freehand curve. In nearly all cases these points made a reasonably smooth curve, excepting where a point was the average of only a few plots at the extreme end of a curve. A horizontal line was drawn through the graph intersecting the trend curve at the point of the average stand for the test. The difference in yield represented by the difference between this horizontal line and the trend curve for any stand value was the adjustment for stand. It was added to a plot yield where the plot stand was below average and was subtracted from the plot yield where the plot stand was above average. No implacable rule was made about discarding plots. When the location of the trend curve became uncertain, usually toward the low-stand end, all plots lying beyond that point were discarded.

DETERMINATION OF THE MID-SILKING PERIOD

The appearance of silks on a corn plant marks the point of change between vegetative growth and the period of grain production. Differences in the time of silking are closely reflected in differences in the time when the grain-filling period is complete. Accurate determinations of relative silking periods help greatly in the determination of relative maturity dates of corn strains. Wherever possible, counts of the number of plants in silk were made on alternate days during the silking period. By interpolation the day when half the plants were in silk was calculated for each plot.

ROOT LODGING AND STALK BREAKING

The data on root and stalk lodging are based on plant counts. A plant was counted as root lodged if at harvest time it leaned to the extent that the ear was half way or more across a row space. Only stalks broken below the point of ear attachment at harvest time were counted as broken.

COMPUTING MOISTURE CONTENT AND ACRE GRAIN YIELDS

A moisture sample was taken from each plot by removing two kernel rows from each ear of three to four systematically chosen hills. This sample was placed immediately in a tight bag or waxed carton and moisture determinations were made electrically the following day, or as soon thereafter as practicable. Tables prepared by the Iowa and Ohio Agricultural Experiment Stations were used to find for any moisture content of sample the factor to convert the field ear weight of a plot to bushels of shelled corn per acre at 15½ per cent of moisture. Comparisons made by the Ohio Station have shown that this short method gives results closely comparable to those obtained by more laborious procedures.

THE SIGNIFICANCE OF DIFFERENCES

The statistical significance of differences between acre grain yields was estimated from the average variance taken from 100 previously conducted tests of the same field design and plot size. For a single test a difference between entries of at least 9 bushels per acre is required for significance with odds of 19 to 1 against the difference being merely due to random variation.

Similarly, if 2 tests are averaged at least 6.4 bushels are required;
if 3 tests are averaged at least 5.2 bushels are required;
if 4 tests are averaged at least 4.5 bushels are required;
if 5 tests are averaged at least 4.0 bushels are required.

COMPUTATION OF EXPECTED YIELDS BASED ON SEASONAL REQUIREMENTS

One of the most frequent sources of error in the interpretation of corn performance experiments arises from a failure to evaluate the gross differences in yielding capacity which are correlated with length of growing season. Entries giving the highest average yield in any Corn-Belt location are usually the ones that are too late for safe grain production at that location. A good late hybrid is no more valuable to the industry than a good early hybrid. Yet, if both are tested in a location where each will reach approximate maturity, the late entry will usually produce the more grain. There is indeed little point in making direct comparisons between early and late entries. It is more useful to know which entries are best within a given seasonal requirement. The writers made an attempt at a solution of this problem in reporting the results of the 1942 corn performance experiments. The general method has not been changed in this report but its application has been modified slightly. A group of entries ranging from early to late were chosen as control strains. A scattergram was made for each performance table by plotting the computed grain yields of these control strains on the upright axis at their corresponding

periods from planting to silking on the horizontal axis. The scattergram shows the general trend of grain yield as a function of silking date for the entries used. A freehand curve then was drawn in conformity with the writers' interpretation of this trend. The height of this curve over any silking date is taken as the expected grain yield for an entry of that silking date.

An example of these graphs is presented in figure 1. This graph was made from the data on silking date and grain yield in table 7. The relation between the silking date and grain yield is not always as close as shown here nor does the yield necessarily increase from the earliest to the latest entry. Often the curve will trend downward toward the late end or if all the entries are too late for the growing season the trend of the curve will be downward from the start. The important point is that the trend be found and that it be used in interpreting the results of field performance experiments. This puts each entry directly in competition with selected entries having similar maturity periods. Expected yield values taken from curves such as shown in figure 1 were found for all entries in tables 2 to 15, inclusive. The differences between the actual and expected yields are given in the third column of each performance table. If a difference has a plus sign, the actual yield was higher than the expected. It was lower if the sign is minus.

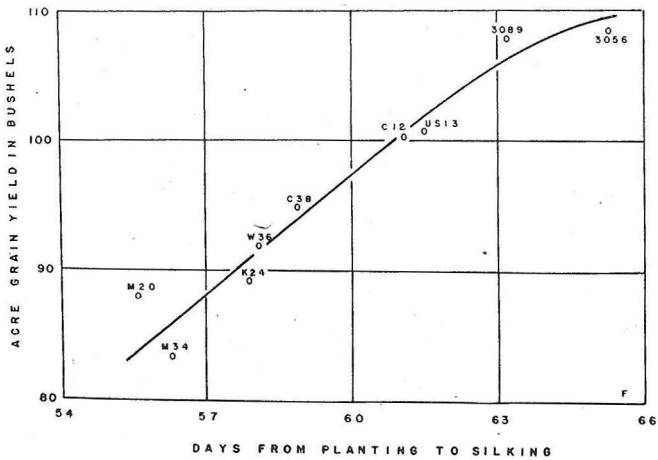

Fig. 1.—An example of the relation of acre grain yield to silking date among the control strains.

GEOGRAPHIC DIVISION OF THE STATE

In 1942 the State was divided into seven areas, which, for purposes of making recommendations, were designated as "Adaptation Areas." Figure 2 shows the location of these areas and the performance data are reported by adaptation areas.

A CLASSIFICATION OF THE CORN STRAINS TESTED

TABLE 1.—Classification of varieties and hybrids reported. 1943 and 1944

Material	Number of strains	Entries
Ohio experimental hybrids	67	407
Experimental hybrids from U. S. Department of Agriculture and other experiment stations	38*	76
Ohio certified hybrids	20	271
Other certified hybrids	7	22
Privately controlled hybrids	25	79
Open-pollinated varieties	5	29
Totals	162	884

*Includes 7 Indiana hybrids, 1 Iowa hybrid, 4 Kansas hybrids, 1 Kentucky hybrid, 21 U. S. hybrids, and 4 West Virginia hybrids.

INDEX OF ENTRIES

3117	11 to 14, inc.
3118	4, 6
3120	4, 6
3121	5
3122	11 to 14, inc.
3123	5, 7
3125	5, 7, 11 to 14, inc.
3126	7, 8
3127	11 to 15, inc.
3128	4, 7
3130	7, 11 to 14, inc.
3131	7
3132	11 to 15, inc.
3133	7
3135	7
3136	6, 8
3138	6, 8
3140	6, 8
3141	6
3143	6
3145	6
3147	4, 11
3157	9, 10, 12 to 14, inc.
3158	9, 10, 12 to 14, inc.
3159	9, 10, 12 to 14, inc.
3160	9, 10, 12 to 14, inc.
3161	9, 10, 12 to 14, inc.
3189	15
3190	15
4001	9
4018	2, 3, 9
4020	9 to 12, inc.
4022	2, 3, 9
4025	9, 10, 11, 12, 14
4026	9, 10, 12
4029	9
4030	9 to 12, inc.

Hybrids Certified in Ohio

Ohio W10	(Oh51A × Ind. Wf9) (Ill. Hy × Ia. L317)	4, 5, 6, 10, 12, 13, 14
Ohio C12	(Ind. Wf9 × Oh07) (Ill. Hy × Ia. L317)	2 to 7, inc., 9 to 14, inc.
Ohio M15	(Oh26 × Oh51) (Ill. A × CC5)	2, 4, 9
Ohio W17	(Oh56 × CI. 4-8) (Oh51 × Oh84)	11, 12
Ohio M20	(Oh51 × Oh26) (Oh33 × Oh40B)	2 to 7, inc., 9 to 14, inc.
Ohio K23	(Oh26 × Oh51) (Oh65 × Oh84)	2, 9
Ohio K24	(Oh51A × Ind. Wf9) (Oh33 × Oh40B)	2 to 7, inc., 9 to 14, inc.

Ohio W30	(Ind. Wf9 × Oh07) (Oh33 × Oh40B)	2, 4, 5, 9, 10
Ohio M34	(Oh51 × Oh26) (Oh40B × Oh02)	2 to 7, inc., 9 to 14, inc.
Ohio K35	(Oh26 × Ill. Hy) (Oh65 × Oh02)	2, 9, 10
Ohio W36	(Oh51A × Ind. Wf9) (Oh40B × Oh02)	2 to 7, inc., 9 to 14, inc.
Ohio C38	(Ind. Wf9 × Ill. Hy) (Oh40B × Oh02)	2 to 7, inc., 9 to 14, inc.
Ohio W46	(Oh51A × Ind. Wf9) (Oh40B × Ia. Os420)	4
Ohio C48	(Ind. Wf9 × Ill. Hy) (Oh40B × Ia. Os420)	5
Ohio W54	(Ind. Wf9 × Oh40B) (Oh51A × Ill. Hy)	5, 12
Ohio L86	(Oh28 × Ia. L317) × Ill. Hy	6, 12
Ohio C88	(Ind. Wf9 × Oh40B) (Ill. Hy × Oh07)	5, 6
Iowa 939	(Ia. L289 × Ia. I205) (Ia. Os420 × Ia. Os426)	4, 5, 6, 11, 12, 13
Iowa 4059	(Ind. Wf9 × Ill. Hy) (Ia. L289 × Ia. I205)	6, 7, 12, 13, 14
U. S. 13	(Ind. Wf9 × Ind. 38-11) (Ill. Hy × Ia. L317)	2 to 15, inc.

Indiana Hybrids

210B	(Ind. Wf9 × Ia. I234) (H5 × M14)	2, 9
416B	(Ind. Wf9 × Ill. Hy) (M14 × 90)	9, 10
418A	(Ind. Wf9 × M14) (CC7 × R4)	10
610	(Ill. A × Ind. L) (Ind. Wf9 × Ill. Hy)	5, 12
620A	(Ind. Wf9 × M14) (Ia. Os420 × Ill. Hy)	13
750A (white)	(Ind. 33-16 × H21) (K41 × K44)	8, 15
0904C (white)	(H21 × Ind. 33-16) (K44 × K64)	15
0905C (white)	(H21 × Ind. 33-16) (K44 × K64)	8
0909C (white)	(H21 × Ind. 33-16) (K61 × K64)	8
2905 (white)	(H21 × Ind. 33-16) (K44 × K55)	8
2906 (white)	(H21 × Ind. 33-16) (K44 × K60)	15

Iowa Hybrids

306	(Ind. Wf9 × Ia. Os420) (Ia. L289 × Ia. I205)	5, 11, 12
939	(Ia. L289 × Ia. I205) (Ia. Os420 × Ia. Os426)	4, 5, 6, 11, 12, 13
4059	(Ind. Wf9 × Ill. Hy) (Ia. L289 × Ia. I205)	6, 7, 12, 13, 14
4297	(M14 × CI. 187-2) (Ind. Wf9 × Ia. I205)	3
4316	(Ind. Wf9 × M14) (Ia. L289 × Ia. I205)	3, 11

Kansas Hybrids

K1583	(KYS × K201C) (K4 × Ind. 38-11)	15
K1585	(K155 × K201C) (K4 × Ind. 38-11)	15
K2234 (white)	(K41 × K55) (K63 × K64)	15
K2275 (white)	(K55 × K64) (Ky. 27 × Ind. 33-16)	15

Kentucky Hybrids

203 (white)	(Ky. 122 × Ky. 27) (Ind. 33-16 × Ky. 49)	8, 15
205 (white)	(Ky. 122 × Ky. 58) (Ind. 33-16 × Ky. 49)	8, 15

U. S. Hybrids

13		(Ind. Wf9 × Ind. 38-11) (Ill. Hy × Ia. L317)	2 to 15, inc.
197	(white)	(Ky. 27 × Ind. 33-16) (T10B × T18C)	8, 15
199	(white)	(Ky. 30A × Ind. 33-16) (T10B × T18C)	8, 15
239		(Ill. Hy × KYS) (P8 × T8)	8, 15
360	(white)	(CI. 11b × Ind. 33-16) (CI. 41 × CI. 43)	8, 15
379		(Ill. Hy × CI. 7) (P8 × T8)	8, 14, 15
396		(CI. 3 × Ind. 38-11) (Ill. Hy × Ia. L317)	8, 15
398		(Ind. Wf9 × Ind. 38-11) (CI. 3 × Ia. L317)	15
404	(white)	(CI. 11b × Ind. 33-16) (T10 × T18)	8, 15
405		(CI. 3 × Oh07) (CI. 7 × Ia. L317)	15
414		(CI. 3 × Ia. L317) (CI. 5 × Ind. 38-11)	8
418		(CI. 3 × Ind. 38-11) (CI. 5 × Ia. L317)	8, 14, 15
419		(CI. 3 × Ind. 38-11) (K4 × Ia. L317)	15
424		(CI. 2 × K4) (CI. 5 × CI. 7)	8, 15
435		(CI. 2 × K4) (CI. 5 × Ind. 38-11)	8
438		(CI. 5 × K4) (CI. 7 × Ind. 38-11)	8, 15
472	(white)	(Ky. 27 × CI. 23) (K55 × Ind. 33-16)	15
474		(Ind. Wf9 × Ind. 38-11) (Oh28 × Ia. L317)	15
479		(CI. 2 × CI. 3) (CI. 7 × T8)	15
493W	(white)	(CI. 11b × CI. 23) (Ky. 27 × K55)	15
496W	(white)	(CI. 43 × Ind. 33-16) (T10 × T18)	15
497W	(white)	(CI. 23 × CI. 43) (T10 × T18)	15

West Virginia Hybrids

B12	(Ia. I205 × Ia. L289) (W. V. 7 × Ia. Os420)	3
B15	(W. V. 12 × CI. 4-8) (Oh51 × Oh84)	10
B17	(W. V. 5 × W. V. 7) (Ldg (K) × Ind. Wf9)	3, 10
B21	(Ind. Wf9 × Ill. Hy) (W. V. 7 × W. V. 15)	10

DeKalb Agr. Assn., Dekalb, Ill.

404A	3, 12
450	3
847	7
888	7

Eastern Pioneer Hybrid Corn Co., Yellow Springs, Ohio

300	5
304	5, 6, 8
313F	6, 7, 8
314	3
317	3
324	2
330	3
332	7
340	4
342	4
373	2

Funk Bros. Seed Co., Bloomington, Ill.

G21	5
G30	5, 7
G80	6, 7
G104	4
G169	4

Pfister Hybrid Corn Co., El Paso, Ill.

260	7
266	7
280	3
360	3
4817	3

Open-pollinated Varieties

Clarage (W. N. Scarff's Sons)	6, 13, 14
Cook (A. B. Cook)	2, 3, 9, 10, 11, 12
Reid (W. N. Scarff's Sons)	7
White Dent (Foster)	8, 15
Woodburn (W. N. Scarff's Sons)	4, 5

TABLE 2.—Adaptation Area 1. 1943

Experiment Number: 602A, Mahoning County. The Mahoning County Experiment Farm cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants
	Bu.	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*
Ohio 4022	64.1	+10.9	20.0	71.7	0.3	0.3
Ohio 3106	60.2	+ 6.9	22.6	72.0	.0	.3
Ohio 1271	58.7	+ 5.3	19.2	72.5	.0	.0
Ohio 1270	58.1	+ 4.9	20.0	71.7	.0	.6
Ohio W30	57.9	+ 4.4	21.4	73.2	.0	.0
Pioneer 373	57.7	+ 4.4	18.8	72.0	.3	.3
Pioneer 324	57.0*	+ 3.6	18.3	72.5	.0	.4
Ohio 3093	56.3	+ 3.1	19.4	71.8	.0	2.2
Ohio 3098	56.1	+ 2.5	26.6	73.4	.9	.9
Ohio 3096	56.0	+ 2.7	18.9	72.0	.0	.6
Ohio K24	55.9	+ 2.6	19.2	72.0	.0	.6
Ohio 3105	55.8	+ 2.4	22.4	72.8	.3	.9
Ohio W36	55.4	+ 2.2	20.3	71.8	.0	.0
Ohio L89	55.1	+ 2.2	25.9	78.5	.0	.0
Ohio M20	54.2	+ 1.0	17.8	71.7	.0	.9
Ohio C12	53.7	+ .1	27.3	76.8	.0	.0
Ohio M1208	53.4	+ .2	19.9	71.8	.3	.3
Ohio 3094	52.0	— 1.3	22.3	72.2	.0	.0
Ohio 4018	51.3	— 2.2	22.2	73.0	.0	.6
Ohio W62	51.3	— 2.3	23.7	73.6	.0	.9
U. S. 13	50.9	— 2.5	27.4	77.4	.0	.0
Ohio M34	50.4	— 2.8	20.8	71.4	.6	.3
Ohio C38	50.4	— 3.1	22.6	73.0	.3	.3
Ohio M15	49.8	— 3.4	18.9	71.6	.0	1.5
Ohio 3099	49.7	— 3.7	28.6	77.4	.0	.3
Ohio K35	49.0	— 4.4	21.6	72.5	.0	.9
Cook	48.3	— 5.2	21.4	73.0	.3	4.4
Ohio 3056	47.9	.0	28.6	81.8	.0	.0
Indiana 210B	47.2	— 6.0	18.3	71.8	.6	.0
Ohio K23	45.4	— 7.8	19.9	71.8	.0	.0

*Four replications only.

TABLE 3.—Adaptation Areas 2 and 5. 1943

Experiment Number: 604B, Wayne County. The Ohio Agricultural Experiment Station cooperating
606B, Henry County. The Northwestern Experiment Farm cooperating

Entry	Acre grain yield				Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants	Aphid-infested plants†
	Both experiments		Experiment No. 604B	Experiment No. 606B					
	Average	Above or below expected							
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Pct.*
Ohio L89	98.3	+ 6.0	124.2	72.4	35.6	69.0	0.6	4.1	4.0
W. Va. B17	97.2	+ 4.7	125.5	68.8	33.9	66.1	1.7	6.1	4.5
Ohio 3098	93.5	+ 4.2	109.9	77.1	33.1	64.2	1.8	4.7	4.2
Ohio C38	92.6	+ 5.1	109.5	75.6	32.3	63.6	.0	4.5	25.3
Ohio 3099	92.6	+ 1.3	107.5	77.6	33.1	65.2	5.8	5.4	9.5
U. S. 13	90.7	— 2.3	125.6	55.8	35.2	68.1	.2	5.2	8.7
Ohio C12	90.6	— 2.5	115.2	65.9	34.7	66.8	.6	2.7	11.6
Ohio 3105	89.7	+ 1.8	112.9	66.5	33.3	63.7	2.4	.4	4.1
W. Va. B12	88.7	— 1.6	104.8	72.6	31.9	64.6	.0	5.6	21.3
Ohio 3106	86.4	— .2	104.8	67.9	30.0	63.3	.6	1.8	.9
Ohio 3056	86.2	— 3.6	119.4	53.0	37.4	70.2	.6	2.0	15.5
Ohio 3060	85.8	— 3.1	107.0	64.6	32.4	64.1	.0	1.2	11.1
Pfister 360	84.8	— 6.7	95.5	74.1	32.7	65.3	.0	4.6	19.3
Ohio W36	84.6	+ 1.5	95.9	73.2	30.4	62.3	.6	3.0	26.9
Pioneer 330	84.4	+ 3.0	102.0	66.7	30.4	61.9	.0	3.4	6.8
Ohio 4022	84.0	+ 1.3	97.6	70.4	29.1	62.2	.6	2.2	3.2
Pfister 280	84.0	— 8.8	105.3	62.6	33.5	66.5	.0	2.1	21.2
Pioneer 317	83.7	— 7.9	96.9	70.5	31.1	65.4	.2	4.0	11.3
Pfister 4817	82.7	—10.5	103.1	62.3	32.4	66.9	.0	4.0	12.9
Iowa 4316	82.5	+ 3.0	101.8	63.2	29.3	61.4	.0	5.8	23.3
Pioneer 314	81.8	—11.0	102.5	61.1	31.6	66.3	1.0	7.4	4.9
Ohio K24	80.9	+ 2.9	89.7	72.1	30.3	61.0	.0	3.6	6.0
Ohio M1208	80.3	+ 2.7	95.5	65.1*	28.3	60.9	.0	2.8	1.6
Iowa 4297	79.6	— 5.2	88.3	70.8	31.5	62.8	.0	1.0	29.1
Ohio 4018	78.8	—10.6	101.1	56.6*	30.3	64.3	.2	3.9	4.0
Ohio M34	76.7	— 2.5	91.0	62.4	27.2	61.3	5.3	3.7	14.0
DeKalb 404A	76.7	—10.5	91.2	62.2*	30.0	63.5	.0	2.5	13.5
Ohio M20	74.8	— 6.3	84.3	65.4	27.8	61.8	.0	2.6	6.2
DeKalb 450	72.2	—17.0	91.4	53.1	33.5	64.2	.0	1.7	23.5
Cook	69.6	—17.3	84.7	54.6	28.3	63.4	2.8	12.0	12.1

*Four replications only.
†Aphid counts taken on Experiment 604B only.

TABLE 4.—Adaptation Area 4. 1943

Experiment Number: 608C, Knox County. The Knox County Hybrid Seed Corn Producers cooperating, on the A. W. Yauger & Sons Farm

610C, Auglaize County. The Auglaize County Hybrid Seed Corn Producers cooperating, on the C. M. Manchester Farm

611C, Erie County. The Erie County Certified Hybrid Seed Corn Growers' Association cooperating, on the Fries Estate Farm

Entry	Acre grain yield					Moisture in grain at harvest	Planting to silking	Root-lodged plants†	Broken plants	Leaf blight‡
	All experiments		Experiment No. 608C	Experiment No. 610C	Experiment No. 611C					
	Average	Above or below expected								
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*
Ohio L89	98.5	+ 4.2	139.4	120.2*	35.9	29.9	70.7	18.9	7.4	2.0
Ohio 3118	97.8	+ 4.6	129.5	121.3	42.6	29.7	69.3	26.9	7.2	.5
Ohio C12	97.0	+ 4.6	134.1	115.4*	41.5	28.4	68.5	13.6	5.1	1.7
Ohio 3147	96.3	+ 5.2	126.9	121.4	40.6	28.8	67.5	20.0	5.9	1.0
Ohio 3116	96.2	+ 2.2	133.7	116.8	38.0	30.4	70.2	28.1	16.3	.5
Ohio 3061	95.1	+ 2.9	126.9	115.9	42.4	28.9	68.3	28.2	5.1	1.0
Ohio 3113	94.9	+ .8	124.0	119.5	41.1	29.7	70.5	36.3	9.5	.5
Ohio 3128	92.0	+ .6	122.9	111.5*	41.7	29.3	67.7	17.8	9.4	.5
Ohio 3056	90.9	— 4.1	128.3	111.0	33.4	29.9	72.3	33.4	4.2	1.7
Funk G104	90.3	— 1.6	123.7	114.3	33.0	28.7	68.1	9.8	3.8	2.5
Ohio W30	90.1	— 5.1	113.1	109.7	47.4	27.6	65.1	13.5	4.7	1.3
Ohio W10	88.6	— .7	120.9	107.7	37.2	27.5	66.5	12.0	6.7	1.1
Ohio 3120	88.5	— 2.9	127.0	105.2	33.2	26.6	67.7	18.2	10.8	1.0
U. S. 13	88.0	— 5.3	124.0	110.1	30.0	29.5	69.4	17.8	6.8	1.3
Ohio C38	87.9	+ .4	118.5	104.7	40.4	27.3	65.7	15.8	6.5	1.0
Ohio W36	85.5	+ 2.3	115.1	101.2	40.3	25.4	64.5	16.5	5.4	.5
Funk G169	84.8	— 8.9	120.0	104.8	29.6	28.9	69.9	17.4	11.5	2.0
Ohio 3115	83.9	— 9.5	115.0	100.3	36.5	27.0	69.6	21.0	13.0	.8
Ohio 3106	83.0	— 2.5	111.7	105.0	32.2	26.5	65.1	10.8	4.7	.5
Ohio K24	81.1	+ 2.5	100.1	102.4	40.9	25.7	63.6	7.2	6.2	1.0
Ohio W46	80.8	— 3.2	107.1	99.2	36.2	26.7	64.7	13.2	4.3	1.5
Iowa 939	79.5	— 8.9	111.1	98.5	29.0	26.2	66.1	15.4	15.6	1.0
Pioneer 342	78.0	— 9.7	111.1	99.1	23.7	25.4	65.8	5.6	4.3	2.5
Ohio 3093	77.1	— 5.9	102.3	95.9	33.2	24.5	64.5	6.4	15.6	3.0
Ohio 3094	75.6	— 8.4	102.8	93.0	31.0	25.6	64.7	2.6	4.7	2.7
Pioneer 340	74.5	—15.6	104.2	98.2	21.1	25.7	66.9	5.4	6.1	3.3
Ohio M34	74.1	— 2.4	103.4	87.4*	31.6	23.2	63.2	22.4	10.2	1.0
Ohio M20	73.4	— 4.1	95.6	93.1	31.5	24.2	63.4	13.8	10.5	1.0
Ohio M15	72.5	— 5.0	99.8	89.8	27.8	23.2	63.4	7.3	15.2	1.5
Woodburn	66.6	—23.9	98.1	87.2	14.4	26.8	67.2	22.3	15.2	2.5

Leaf-blight score: Light = 1; medium light = 2; medium = 3; medium heavy = 4; heavy = 5.

*Four replications only.

†Root-lodging data taken on Experiments 608C and 611C only.

‡Leaf-blight data taken on Experiment 608C only.

TABLE 5.—Adaptation Areas 4 and 5. 1943

Experiment Number: 613D, Van Wert County. The Van Wert County Hybrid Corn Growers cooperating, on the Marsh Foundation Farms

615D, Hardin County. The Hardin County Hybrid Corn Growers cooperating, on the Wayne E. Putnam Farm

Entry	Acre grain yield				Moisture in grain at harvest	Planting to silking‡	Root-lodged plants	Broken plants
	Both experiments		Experiment No. 613D	Experiment No. 615D				
	Average	Above or below expected						
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*
Ohio 3083	77.4	+ 2.8	78.7	76.2	38.8	59.6	3.0	1.7
Ohio C50	76.8	+ 2.2	84.7†	69.0	41.1	59.6	5.8	1.3
Ohio 3123	76.3	+ 1.8	82.7*	69.9	40.6	59.4	6.5	4.7
Ohio W30	75.6	+ 1.8	76.0	75.3	38.3	58.6	3.4	1.4
Funk G21	74.7	.0	77.6*	71.8	39.9	59.8	7.8	1.4
Ohio C38	74.4	+ .3	75.4	73.4	39.9	58.8	2.2	.9
Ohio C12	73.8	+ .3	77.7	69.8	39.7	62.0	5.2	2.8
Iowa 306	73.6	+ .6	76.9*	70.2	38.8	58.0	4.8	1.6
Ohio C88-1	73.0	— 1.5	75.0	70.9	40.2	60.8	2.6	2.4
U. S. 13	72.6	— .3	72.9	72.4	38.4	62.4	6.5	3.8
Ohio K24	72.0	+ 2.1	70.4	73.7	36.7	56.6	2.2	.8
Ohio L89	71.7	+ .1	74.6	68.8	39.9	63.4	8.0	6.4
Ohio 3121	71.2	— 3.1	74.8	67.7*	40.0	61.2	8.3	10.9
Ohio C48	70.2	— 4.6	68.6	71.7	40.6	60.2	4.0	1.6
Ohio W36	69.5	.0	66.8	72.2	37.6	56.4	2.8	1.5
Ohio 3125	69.2	+ 5.5	73.5*	64.8	38.4	60.0	10.8	3.4
Ohio 3049	68.9	— 5.7	74.0	63.8†	40.2	60.6	2.6	3.2
Iowa 939	67.8	— 5.2	65.9	69.6	37.0	58.0	7.5	5.8
Ohio M20	67.4	— 3.0	64.4	70.3	34.2	56.8	.0	1.8
Pioneer 300	67.2	— 4.2	66.9	67.5	40.6	63.4	13.1	3.4
Ohio C88	67.0	— 7.3	72.6	61.3*	40.6	61.2	9.0	1.0
Funk G30	66.7	— 8.1	67.0*	66.4*	39.2	60.2	1.2	4.7
Ohio M34	66.6	— .6	64.0	69.3	33.1	55.6	3.8	4.0
Indiana 610	66.0	— 8.4	60.3	71.8	39.0	61.0	17.2	3.4
Ohio C92	65.1	— 6.9	62.4	67.8	40.6	63.0	8.5	2.2
Ohio W54	64.8	— 9.6	60.9	68.8	38.1	59.2	3.0	1.1
Ohio 3056	62.0	.....	59.8	64.1	40.6	71.4	23.2	5.3
Ohio W10	61.4	—12.9	57.6	65.1	39.1	61.2	7.7	4.1
Pioneer 304	59.2	—15.1	64.9	53.5	41.8	61.2	6.0	3.2
Woodburn	50.6	—24.0	45.8†	55.5	39.7	60.4	16.9	5.5

*Four replications only.
†Three replications only.
‡Silking data taken on Experiment 613D only.

TABLE 6.—Adaptation Area 6. 1943

Experiment Number: 616E, Madison County. The Madison County Hybrid Seed Corn Producers cooperating, on the Madison County Experiment Farm
617E, Fayette County. The Fayette County Seed Improvement Association cooperating, on the Harold C. Mark Farm
618E, Franklin County. The Ohio State University cooperating
619E, Highland County. The Meyers Hybrid Corn Company cooperating

Entry	Acre grain yield						Moisture in grain at harvest	Planting to silking†	Root-lodged plants‡	Broken plants	Leaf blight§
	All experiments		Experiment No. 616E	Experiment No. 617E	Experiment No. 618E	Experiment No. 619E					
	Average	Above or below expected									
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*
Ohio L89	116.5	+ 6.2	115.4	106.6	116.8	127.1	25.1	65.3	0.0	1.9	2.2
Ohio 3116	111.3	+ 2.4	105.9	116.6	99.7	123.1	25.6	64.1	.4	2.5	1.0
Ohio 3143	110.5	+ 5.8	108.1	108.7	104.3	121.0	24.3	61.8	.7	1.2	3.1
Ohio 3056	110.2	— .5	109.9	100.6	105.3	124.8	23.8	67.5	.2	1.7	2.1
Funk G80	109.7	— .6	110.2	97.1	105.9	125.7	25.1	65.3	.5	1.8	2.6
Ohio 3141	108.4	+ .4	108.4	105.2	103.4	116.4	24.8	63.4	.4	1.0	2.1
Ohio 3136	108.2	— 2.5	107.0	94.8	107.6	123.3	26.4	66.3	.0	3.8	.7
Ohio 3118	106.7	+ .5	100.0	102.8	106.0	118.0	23.2	62.5	.2	1.6	1.1
U. S. 13	106.7	— .9	104.2	100.6	104.3	117.8	24.0	63.2	.0	1.7	2.1
Ohio 3111	105.0	— 5.7	101.8	97.7	107.6	112.8	24.4	66.4	.8	2.0	1.1
Ohio 3120	104.2	— .9	96.8	105.1	100.3	114.7	19.9	62.0	.1	1.5	1.6
Ohio 3138	104.1	— 5.5	100.5	96.7	103.8	115.3	24.6	64.7	.3	2.1	.9
Ohio C12	102.0	— 5.4	96.6	95.0*	101.2	115.4	22.6	63.1	.8	.8	3.2
Ohio 3145	101.7	— 2.6	97.3	92.9	106.4	110.2	20.9	61.7	.7	1.9	2.7
Ohio 3140	101.5	— 8.7	94.7	97.8	100.6	113.0	21.5	65.2	.1	2.0	1.5
Iowa 4059	100.8	— 1.7	93.6	101.2	91.6	116.9	22.3	61.0	.4	1.5	2.3
Ohio L86	100.5	— 7.5	97.9	94.2	98.2	111.6	23.1	63.4	.2	1.1	1.6
Ohio 3113	100.2	— 8.5	96.1	91.7	99.9	113.2	24.3	63.9	2.5	1.6	1.3
Ohio W36	100.0	+ 3.6	89.7	103.5	86.8	120.2	20.3	59.1	.7	1.0	1.7
Ohio 3115	98.5	—10.2	89.0	93.5	97.5	114.0	20.1	63.8	.6	1.4	1.9
Ohio C38	97.0	— 1.8	87.8	98.2	92.5	109.6	22.1	59.8	1.0	1.2	2.0
Ohio K24	96.8	+ 3.8	90.5	97.3	86.5	112.9	19.1	58.3	.5	1.3	2.6
Iowa 939	96.3	— 3.3	91.0	95.7*	85.9	112.5	20.4	60.1	.7	2.4	1.4
Ohio W10	95.2	— 9.6	93.1	86.2	93.9	107.4	23.6	61.9	.3	1.0	2.7
Ohio C88	94.8	— 9.6	88.6	91.2	96.6	102.7	22.9	61.7	.6	1.3	3.9
Pioneer 313F	94.8	—12.4	97.1	90.7	92.3	99.2	25.4	62.9	.2	1.6	3.4
Ohio M20	87.6	— 3.8	78.4	88.8	76.9	106.2	17.6	57.9	2.3	1.8	2.4
Ohio M34	85.8	— 3.7	77.9	90.5	72.0	102.6	18.7	57.4	2.5	1.8	1.7
Pioneer 304	84.0	—25.5	83.9	75.9*	84.3	92.0	24.1	64.5	.2	1.0	3.2
Clarage	78.7	—28.7	68.4	76.9*	75.1	94.4	23.0	63.1	5.4	8.1	2.3

Leaf-blight score: Light = 1; medium light = 2; medium = 3; medium heavy = 4; heavy = 5.
*Four replications only.
†Silking data taken on Experiments 617E, 618E, and 619E only.
‡Root-lodging data taken on Experiments 616E, 617E, and 618E only.
§Leaf-blight data taken on Experiments 616E, 617E, and 619E only.

TABLE 7.—Adaptation Area 6. 1943

Experiment Number: 620F, Miami County. The Miami County Experiment Farm cooperating
623F, Hamilton County. The Hamilton County Experiment Farm cooperating
624F, Montgomery County. The Southwestern Experiment Farm cooperating

Entry	Acre grain yield					Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants	Leaf blight†	Smutted plants‡
	All experiments		Experiment No. 620F	Experiment No. 623F	Experiment No. 624F						
	Average	Above or below expected									
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*	*Pct.*
Ohio 3056	108.4	— 1.2	115.7	102.9	106.7	19.9	65.3	4.1	3.2	2.2	0.3
Ohio L89	107.8	+ 1.5	111.1	104.3	107.9	21.2	63.2	2.2	6.5	2.1	.9
Funk G80	105.8	— 1.7	113.7*	107.6*	96.1	22.2	63.8	3.3	5.7	1.9	.3
Ohio 3126	105.0	— .3	110.9	101.9	102.1	22.4	62.8	4.2	12.1	1.0	.9
Ohio 3133	104.1	+ 1.9	111.0*	101.2	100.1	22.7	61.6	2.2	4.7	1.1	.9
Ohio 3128	103.9	+ 6.4	106.3	101.8	103.7	21.5	60.1	9.0	7.6	1.0	1.6
DeKalb 847	103.8	+ 2.4	108.7	99.3	103.3	20.7	61.4	2.5	2.4	2.5	1.9
DeKalb 888	102.9	— 3.5	109.6	99.9	99.1	22.2	63.3	2.1	5.7	1.6	.3
U. S. 13	100.7	— 1.0	113.2	96.2*	92.7	20.0	61.5	1.8	5.1	2.2	.0
Ohio C12	100.2	— .3	103.4	107.3	89.9	19.1	61.1	7.3	3.6	2.9	.3
Ohio 3131	99.1	— 6.4	105.1	95.7	96.5	22.6	62.9	1.0	12.2	1.0	.0
Ohio 3130	97.3	+ .5	104.6	93.8	93.4	17.1	59.9	5.7	5.7	1.6	3.2
Ohio 3111	96.4	—11.1	103.7	89.6*	95.9	20.7	63.8	4.5	6.2	1.0	1.8
Ohio C38	94.8	+ 1.0	97.6	89.8	97.1	18.7	58.9	9.8	2.4	1.4	1.0
Ohio 3115	94.4	— 7.3	100.2	91.5	91.6	17.1	61.5	8.1	4.5	1.2	4.9
Ohio 3135	93.6	— 4.5	101.2	83.8	95.8	18.6	60.3	.6	4.8	1.2	.6
Ohio 3113	93.3	—11.3	102.2	91.3	95.5	21.2	62.6	10.7	5.6	1.0	1.4
Iowa 4059	92.9	— 3.9	104.5	87.3	86.8	19.3	59.9	3.2	4.5	2.9	.6
Ohio 3123	92.6	— 3.4	107.6*	73.1*	97.1	24.5	59.6	6.2	4.0	1.0	.3
Ohio 3125	92.0	— 4.0	96.1	88.5	91.3	17.4	59.6	5.0	2.9	1.6	2.3
Ohio W36	91.8	+ .4	101.7	89.0	84.6	17.4	58.1	12.5	1.6	1.4	.6
Pioneer 313F	91.4	— 8.2	94.1	87.6*	92.4	19.9	60.8	7.2	2.5	3.6	1.4
Pioneer 332	91.2	—11.8	89.7	90.4*	93.4	21.1	62.0	3.5	5.8	3.1	2.1
Ohio K24	89.1	— 1.6	98.9	81.9*	86.5	17.0	57.9	4.3	3.0	2.6	.0
Ohio M20	88.0	+ 4.2	89.4	88.6*	86.1	15.9	55.6	10.4	4.3	2.0	1.1
Funk G30	86.8	— 9.2	88.2	83.9	88.4	19.6	59.6	6.7	4.0	2.8	.3
Ohio M34	83.3	— 2.7	87.0	80.7	82.2	15.7	56.3	20.0	2.1	1.2	.9
Reid	79.2	.....	72.2*	73.0*	92.3	27.7	69.4	20.9	9.7	1.6	6.3
Pfister 260	78.6	—20.7	80.3	79.6*	76.0	19.8	60.7	8.9	4.2	2.9	2.9
Pfister 266	75.2	—24.4	81.0	72.8	71.7	17.2	60.8	7.5	4.5	2.4	.9

Leaf-blight score: Light = 1; medium light = 2; medium = 3; medium heavy = 4; heavy = 5.
*Four replications only.
†Leaf-blight data taken on Experiments 623F and 624F only.
‡Smut data taken on Experiment 624F only.

TABLE 8.—Adaptation Area 7. 1943

Experiment Number: 625G, Ross County. The George C. Foster Farm cooperating
626G, Pike County. The Joseph V. Vanmeter Farm cooperating

Entry	Acre grain yield				Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants	Leaf blight
	Both experiments		Experiment No. 625G	Experiment No. 626G					
	Average	Above or below expected							
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*
U. S. 418	110.6	+ 2.2	106.9	114.2	22.6	61.2	0.8	11.4	2.6
Ky. 205 (W)†	110.4	+ 4.4	114.4	106.5	20.7	61.0	2.0	9.7	2.3
U. S. 239	108.6	— .2	106.2	110.9	23.4	59.6	8.3	7.6	3.2
U. S. 197 (W)	107.9	— 1.1	109.6	106.2	23.5	62.0	3.4	12.4	1.9
U. S. 404 (W)	107.6	— 1.5	105.5	109.6	23.6	62.0	2.9	12.8	2.6
U. S. 438	107.2	— 1.2	103.8	110.6	22.6	62.0	1.0	8.6	2.4
Ky. 203 (W)	106.6	— .4	104.7	108.4	21.4	61.8	1.9	10.2	2.6
U. S. 379	106.2	— 3.3	106.4	105.9	24.3	60.2	4.4	5.3	2.2
Ind. 750A (W)	104.4	— 3.1	105.7	103.0	21.7	59.6	4.2	1.4	2.3
U. S. 199 (W)	104.4	— 3.2	102.9	106.0	21.9	60.8	2.0	12.2	3.3
Ind. 0909C (W)	104.0	— 2.1	101.4	106.5	20.8	61.0	4.2	4.2	3.3
U. S. 414	103.4	— 4.7	95.8	111.1	22.4	61.6	.6	14.6	2.6
U. S. 435	103.3	— 2.2	99.8	106.8	20.6	62.4	2.4	15.6	2.5
U. S. 424	102.8	— 4.4	103.7	102.0	21.5	63.4	2.6	15.8	2.4
Ohio L89	102.6	+ 1.4	98.8	106.4	18.9	60.2	.3	5.4	3.5
Ind. 0905C (W)	102.4	— 5.6	102.7	102.0	22.2	60.8	2.6	6.0	3.4
U. S. 396	101.0	— 7.6	95.9	106.1	22.9	60.6	.2	8.0	3.0
Ohio 3056	100.2	— 1.0	97.2*	103.1	18.9	62.0	.3	4.7	2.8
Ind. 2905 (W)	99.8	— 8.3	101.9	97.7	22.3	60.8	1.4	2.7	2.8
U. S. 13	98.6	— .6	93.0	104.2	18.3	59.6	.3	3.4	3.0
Ohio 3136	98.6	— 6.4	93.5	103.6	20.3	61.8	1.5	23.2	1.2
Ohio 3126	98.5	— 7.5	96.4	100.6	20.7	60.4	.6	9.8	1.8
U. S. 360 (W)	97.8	— 9.5	92.5	103.2	21.6	62.6	1.0	8.0	2.7
White Dent	97.7	—11.1	98.9*	96.5	23.2	63.6	6.5	13.0	2.9
Ohio 3138	96.8	— 5.4	93.9	99.7	19.2	60.6	1.4	13.4	2.2
Ohio 3091	95.5	— 8.0	93.2	97.8	19.6	61.0	1.4	4.7	2.4
Ohio 3111	95.4	— 1.6	89.7	101.0	17.8	61.4	1.6	11.2	1.6
Ohio 3140	93.3	+ 4.5	91.6	95.0	16.0	60.0	.0	5.5	3.2
Pioneer 313F	84.6	—20.8	76.6	92.7	20.4	59.8	.9	3.9	4.0
Pioneer 304	67.2	—34.4	61.5	73.0	19.0	60.0	1.4	6.4	4.2

Leaf-blight score: Light = 1; medium light = 2; medium = 3; medium heavy = 4; heavy = 5.

*Four replications only.

†White entries are indicated by the letter (W) following the entry designations.

TABLE 9.—Adaptation Area 1. 1944

Experiment Number: 602A, Mahoning County. The Mahoning County Experiment Farm cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking
	Bu.	*Bu.*	*Pct.*	*Days*
Ohio K35	65.0	+ 2.9	21.0	74.8
Ohio 4020	64.3	+ 2.2	23.1	75.0
Ohio W36	63.6	+ 2.2	21.1	73.6
Ohio W30	62.9	+ 1.0	20.6	76.2
Ohio 4029	62.8	+ .8	22.1	75.8
Ohio 3161	62.7	+ .7	21.5	74.6
Ohio C38	62.6	+ .6	23.0	75.8
Ohio 3158	61.4	— .5	21.8	76.0
Ohio C12	61.1	+ .9	22.9	78.2
Ohio M20	60.6	+ .2	18.2	72.8
Ohio 4001	60.6	— .4	19.1	73.2
Ohio 4022	60.5	— 1.5	20.9	74.6
Ohio 3160	60.5	— .9	21.4	73.6
Ohio 3159	60.1	— .6	22.1	73.0
Indiana 416B	59.9*	— 2.0	20.2	76.0
Ohio K24	59.7	— 1.5	20.0	73.4
Ohio 4025	59.5	— 1.7	19.8	73.4
Ohio 4018	59.5	— 1.7	21.0	73.4
Ohio 4026	59.4	— 2.2	22.9	73.8
Ohio K23	58.6	— 1.8	20.2	72.8
Ohio M34	58.3	.0	19.5	72.4
Ohio M15	58.2	— 1.9	19.2	72.6
Ohio 3157	58.1	— 2.9	21.1	73.2
U. S. 13	56.4	— 2.3	25.2	79.2
Ohio L89	56.1	+ .6	24.4	80.8
Ohio 3049	55.0	— 4.9	23.4	78.4
Indiana 210B	54.3	— 7.4	19.8	74.0
Ohio 4030	54.2	— 7.9	21.4	75.4
Ohio 3056	49.2	.....	24.0	87.2
Cook	47.2	—14.7	20.5	76.0

*Four replications only.

TABLE 10.—Adaptation Area 2. 1944

Experiment Number: 604B, Wayne County. The Ohio Agricultural Experiment Station cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants
	Bu.	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*
Ohio 3049	56.2	+ 6.3	25.7	73.6	4.3	3.7
Ohio L89	54.2	+ 5.4	27.3	76.2	.0	1.1
Ohio C12	54.1	+ 4.4	27.7	75.0	2.7	2.1
Ohio 1273	52.5	+ 6.9	22.2	68.8	.0	.6
Ohio 4030	52.3	+ 3.9	23.8	71.0	4.2	1.9
Ohio 4025	49.1	+ 2.6	21.1	69.4	10.5	6.1
Ohio W36	48.9	+ 2.4	21.7	69.4	1.8	3.4
Ohio 4020	48.0	— 1.4	26.2	72.2	3.7	4.3
Ohio 4026	47.9	— .1	24.4	70.6	.3	2.9
Ohio 3159	47.4	+ .6	23.1	69.6	.0	4.5
Ohio K24	46.3*	— 1.4	21.8	70.4	.3	3.8
Ohio M34	45.4	+ .4	20.6	68.4	12.4	8.7
Ohio C38	44.9	— 4.7	25.3	72.6	1.4	3.0
U. S. 13	44.8	— 4.6	26.0	75.6	.3	2.4
Ohio 3160	44.3	— 4.1	23.9	71.0	1.6	6.5
Ohio M20	44.0*	— 1.6	20.2	68.8	8.4	3.7
Ohio 3158	43.8	— 5.7	23.5	72.4	1.6	1.9
Ohio W30	42.0	— 7.8	25.3	73.0	.0	2.6
Ohio 3042	42.0	— 6.2	22.7	70.8	.3	5.3
W. Va. B15	40.4	— 8.2	23.5	71.2	8.7	16.3
Ohio K35	39.9	— 8.1	21.5	70.6	4.5	3.1
Ohio W10	38.5	—11.5	25.3	74.2	7.6	7.3
Ohio 3161	38.3	—11.6	25.0	73.4	.5	2.7
Indiana 418A	37.4	—10.8	22.5	70.8	2.5	2.5
Indiana 416B	35.8	—14.1	24.4	73.6	.3	1.5
Ohio 3157	35.4	—12.8	23.5	70.8	.0	6.7
Ohio 3056	29.8	.....	26.7	79.2	.9	1.5
W. Va. B21	27.7	—20.9	27.7	76.4	.8	1.0
W. Va. B17	27.4	—21.8	27.4	75.8	9.8	4.5
Cook	24.8*	—24.7	22.8	72.4	7.4	9.6

*Four replications only.

TABLE 11.—Adaptation Area 5. 1944

Experiment Number: 605C, Henry County. The Northwestern Experiment Farm cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking
	Bu.	*Bu.*	*Pct.*	*Days*
Ohio C92	82.2	+ 3.9	18.8	68.4
Ohio 3147	82.1	+ 3.9	18.2	68.2
Ohio C12	80.0	+ 1.5	18.5	68.6
Ohio 3049	79.4	+ .9	18.3	68.6
Ohio 3056	78.0	+ 1.7	18.2	71.4
U. S. 13	77.6	— 1.0	19.0	69.2
Ohio 3122	77.5	+ .1	17.8	67.4
Ohio 3127	77.4	— .8	19.5	68.2
Ohio 3084	76.8	— .3	19.1	71.0
Ohio C38	76.3	+ .8	18.0	66.2
Ohio 3086	75.8	— .1	18.2	66.4
Ohio 3117	75.6	— 2.9	18.3	68.6
Ohio 3125	75.3	— 1.6	17.0	67.0
Ohio 3132	74.7	— 3.9	18.8	69.0
Ohio K24	74.3	+ 1.4	16.0	65.0
Ohio W36	74.2	+ .4	16.7	65.4
Ohio 4025	73.0	— .8	15.6	65.4
Ohio 3083	72.9	— 4.0	18.5	67.0
Ohio W17	72.4	— 5.0	18.1	67.4
Ohio 3130	72.3	— 5.8	15.8	68.0
Iowa 4316	72.1	— 1.2	16.8	65.2
Ohio M20	71.2	+ .4	14.4	64.2
Ohio L89	71.2	— 4.0	20.2	71.8
Ohio W62	71.0*	— 4.5	17.8	66.2
Ohio 4020	70.9	— 4.6	17.5	66.2
Ohio 4030	69.8	— 5.7	17.0	66.2
Ohio M34	68.1	— 5.2	14.8	65.2
Iowa 306	67.4	— 6.4	18.8	65.4
Iowa 939	65.9	— 9.6	17.9	66.2
Cook	54.3	—20.3	16.5	65.8

*Four replications only.

TABLE 12.—Adaptation Area 5. 1944

Experiment Number: 218, Van Wert County. The Marsh Foundation Farms cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking	Root-lodged plants*	Corn borer leaf injury†
	Bu.	*Bu.*	*Pct.*	*Days*	*Score*	*Score*
Ohio 3084	77.6‡	+ 5.4	26.4	69.4	0.0	2.4
Ohio C12	77.5	+ 5.8	24.5	69.2	2.0	2.2
Ohio C92	75.4	+ 5.8	23.8	67.6	.0	3.3
Ohio L89	75.2	+ 1.4	26.0	72.2	.0	2.5
Indiana 610	74.8	+ 6.6	24.2	66.8	2.3	2.6
Ohio 3132	72.5	+ 4.6	22.2	66.6	.3	2.6
Ohio 3117	72.4	+ 1.2	22.4	68.8	.3	2.2
Ohio 3056	71.9	— 1.3	26.1	71.0	.7	3.0
Ohio 3049	71.8	+ 1.2	23.5	68.4	1.3	1.6
Ohio W10	71.7	+ 2.4	24.2	67.4	.7	2.0
Ohio 3127	69.7	— .8	25.0	68.2	1.3	1.7
Ohio C38	69.6	+ .6	23.1	67.2	2.7	2.5
Ohio 3083	68.9	+ .7	23.2	66.8	.3	3.2
Ohio 3159	68.4	+ 8.3	20.4	63.2	.7	3.6
U. S. 13	68.0	— 4.3	25.0	69.8	.0	2.5
Ohio 3122	67.3‡	— 2.1	21.0	67.5	1.0	3.2
Ohio 4025	67.0	+ 1.0	20.2	65.6	2.0	2.3
Iowa 4059	66.6	— 1.6	23.5	66.8	.7	4.2
Ohio 4026	66.4	+ 3.7	21.9	64.2	.7	2.6
Ohio L86	66.4‡	— 5.1	24.3	69.0	1.3	2.1
Ohio 3160	65.4	+ 2.2	19.4	64.4	1.3	3.3
Ohio 3157	65.4	+ 8.1	20.4	62.2	.0	4.1
Ohio W36	64.4	— 3.5	21.0	66.6	3.3	2.9
Ohio 3130	63.9	— 6.3	22.1	68.0	1.3	2.9
Ohio K24	63.0	+ 1.8	18.9	63.6	.7	2.5
Iowa 306	62.7§	+ 1.9	21.0	63.5	.0	4.0
Ohio 4020	62.7	— 2.5	21.9	65.2	2.0	2.7
Ohio M34	62.4	+ 4.3	18.1	62.5	3.0	2.6
Ohio W62	62.3‡	— 4.9	21.1	66.2	.7	3.1
Ohio 3125	61.9‡	— 7.4	23.8	67.4	.7	3.4
Ohio 3158	61.8	— 4.6	21.3	65.8	.0	2.9
Ohio W54	60.5‡	— 7.1	23.7	66.4	1.3	2.6
Ohio 4030	59.6	— 6.8	20.8	65.8	1.0	2.6
Ohio M20	58.7	— 1.4	18.6	63.2	2.3	2.5
Ohio 3161	58.5	— 5.2	22.0	64.6	.3	2.6
Ohio W17	57.6	—11.7	22.0	67.4	.3	3.3
Iowa 939	52.3‡	—10.9	19.8	64.4	.7	4.0
DeKalb 404A	52.0	— 9.2	20.0	63.6	.3	3.7
Cook	40.3‡	—26.9	21.6	66.2	3.7	4.0

*Root-lodging score: 0 = least, 4 = most.
†Corn borer leaf injury score: 1 = least, 5 = most.
‡Four replications only.
§Three replications only.

TABLE 13.—Adaptation Area 6. 1944

Experiment Number: 607D, Franklin County. The Ohio State University cooperating
608D, Madison County. The Madison County Experiment Farm cooperating
609D, Miami County. The Miami County Experiment Farm cooperating
610D, Montgomery County. The Southwestern Experiment Farm cooperating

Entry	Acre grain yield						Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants	Corn borer leaf injury*
	All experiments		Experiment No. 607D	Experiment No. 608D	Experiment No. 609D	Experiment No. 610D					
	Average	Above or below expected									
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*
Ohio L89	62.2	+ 3.8	38.6	64.7	86.6	58.8	20.5	72.4	2.9	3.0	1.6
Ohio 3084	61.0	+ 2.8	39.8	79.9	77.0	47.3	20.7	70.9	1.6	1.2	1.7
Ohio 3049	59.7	+ 2.9	44.4	68.6†	75.1	50.7	19.7	69.0	8.4	5.4	1.0
Ohio 3130	57.8	+ .6	33.0	68.0	79.2	51.0	17.8	69.4	3.7	6.8	3.3
Ohio C12	57.8	— .2	40.4	69.0	75.9	45.7	19.6	70.6	8.1	2.9	2.1
Ohio 3132	57.8	+ 1.6	33.4	64.7	84.3	48.9	20.1	68.4	1.8	2.6	2.0
Ohio 3122	57.1	+ .9	37.0	67.8	80.2	43.2	19.5	68.4	3.7	5.7	2.5
U. S. 13	57.1	— .5	36.4	62.3	80.7	49.1	21.0	69.9	1.8	2.9	2.5
Ohio 3083	56.9	+ 1.7	34.8	73.2†	72.0	47.5	19.7	67.5	3.3	1.3	3.1
Ohio C38	54.8	— .6	28.8	69.6	73.8	46.8	18.6	67.7	9.5	2.3	3.1
Ohio W10	54.0	— 3.1	28.3	60.1	76.6	50.9	20.5	69.3	5.7	4.7	1.7
Ohio W36	53.9	+ .3	38.9	61.1	71.7	43.9	17.8	66.3	4.5	2.3	2.9
Ohio 3056	53.6	— 3.6	31.5	60.0	77.4	45.3	19.7	74.7	1.9	1.9	3.2
Ohio 3117	53.3	— 4.3	30.4	64.2†	75.2	43.4	20.2	69.9	7.7	3.0	1.5
Iowa 4059	53.0	— 1.1	27.3	64.8	73.9	46.0	18.6	66.7	1.9	4.6	4.2
Ohio 3125	52.7	— 2.7	28.6	58.2	76.8	47.3	18.4	67.7	2.1	1.9	3.8
Ohio 3159	52.2	— .5	29.2	61.2	72.0	46.5	18.3	65.7	1.2	4.6	3.0
Ohio K24	51.8	— .9	39.3	51.4	71.3	45.2	17.5	65.7	2.4	4.1	2.0
Ohio 3085	51.3	— 5.1	36.8	56.3	71.1	41.0	18.3	68.6	2.6	4.0	2.2
Ohio 3160	50.9	— 3.6	38.9	50.6	72.4	41.7	18.2	67.0	1.8	7.6	2.5
Ohio 3086	50.8	— 4.0	36.3	53.9	68.2	44.7	19.1	67.2	.3	1.6	3.2
Ohio 3127	50.5	— 6.4	28.2	65.6	65.8	42.4	20.8	69.1	6.5	6.8	1.1
Ohio M34	50.4	— .1	33.6	55.1	66.5	46.3	16.2	64.3	10.4	4.4	2.7
Ohio M20	50.3	+ .4	34.9	51.9	66.4†	48.1	16.1	63.9	2.0	6.6	1.9
Ohio 3161	50.2	— 5.4	26.8	61.4	73.4	39.0	19.1	67.9	.0	6.5	2.8
Iowa 939	49.7	— 2.9	24.8	57.7	75.9	40.5	18.5	65.6	3.4	7.9	4.6
Ohio 3157	49.1	— 3.5	33.6	53.2	69.0	40.7	17.6	65.6	2.7	3.3	4.4
Ohio 3158	47.6	— 8.0	28.0	50.3	68.0	44.2	18.9	67.9	6.7	4.7	3.4
Indiana 620A	47.2	— 8.6	27.3	56.3	66.5	38.8	19.5	68.0	2.1	3.8	3.7
Clarage	37.4	—21.0	20.2	45.2	48.4	35.9	19.9	71.6	16.6	5.0	3.5

*Corn- borer injury to leaves: 1 = least, 5 = most. Taken on Experiments 607D and 610D only.
†Four replications only.

TABLE 14.—Adaptation Area 6. 1944

Experiment Number: 611E, Meigs County. The Southeastern Experiment Farm cooperating
612E, Clermont County. The Clermont County Experiment Farm cooperating
613E, Hamilton County. The Hamilton County Experiment Farm cooperating

Entry	Acre grain yield					Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants
	All experiments		Experiment No. 611E	Experiment No. 612E	Experiment No. 613E				
	Average	Above or below expected							
	Bu.	*Bu.*	*Bu.*	*Bu*	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*
Ohio 3049	63.1	+ 5.5	53.0*	47.0*	89.2	17.3	67.8	2.5	1.5
Ohio C12	61.7	+ 3.3	50.3	47.1	87.6	17.1	68.7	3.7	1.7
Ohio 3084	61.4	+ 2.9	47.7	51.3	85.3	18.0	68.9	.1	1.1
U. S. 418	60.4	+ 2.7	45.0	51.1	85.1	22.0	71.9	5.2	2.7
Ohio L89	59.2	+ .5	45.6	45.7	86.3	17.9	70.2	.8	1.4
Ohio 3117	57.8	+ .5	45.7	46.4*	81.3	17.1	67.5	6.1	2.0
Ohio 3132	57.7	+ .5	46.9	47.6	78.7	18.0	67.4	.7	2.1
Ohio 3127	56.9	— 1.0	47.0	49.9*	73.8	18.2	68.1	6.1	4.0
Ohio W10	56.7	+ .5	42.7*	47.9	79.4	17.7	66.7	2.4	1.0
Ohio C38	56.6	+ 1.5	44.0	49.6	76.1	16.6	66.0	2.9	1.1
Ohio 3056	56.5	— 1.0	44.4	42.3	82.8*	16.8	72.1	1.8	1.2
U. S. 379	56.3	— 2.2	44.1	44.9	80.0	21.5	70.9	7.1	.8
Ohio 3130	56.2	— .8	41.0	50.9	76.8	16.3	67.3	1.2	3.2
U. S. 13	55.5	— 2.8	37.2	46.7	82.7	20.6	68.6	.2	.9
Ohio 3122	54.5	— 2.0	39.7	51.2	72.5	17.0	66.9	5.7	1.9
Ohio 3161	54.3	— .5	44.0	47.3	71.5	16.8	65.8	.4	2.8
Ohio 4025	53.9	+ 2.4	41.6	46.9	73.1	15.5	64.0	4.7	1.9
Ohio W36	53.1	+ 1.4	40.7	43.2*	75.5	15.5	64.1	1.8	.6
Ohio 3159	51.9	— .9	33.9	48.6	73.1	15.8	64.7	.2	3.1
Ohio 3086	51.9	— 4.0	40.3*	43.7	71.7	17.3	66.5	.2	1.1
Ohio 3125	51.7	— 3.6	35.8	43.7*	75.5*	16.0	66.1	.6	1.9
Ohio M34	51.3	+ 1.9	41.6*	42.0*	70.3	14.4	62.9	7.9	1.3
Ohio 3160	50.9	— 2.3	39.6	44.6	68.5	15.4	64.9	1.9	2.8
Ohio 3083	50.3	— 7.2	37.1*	46.1	67.7	17.3	67.7	.2	.3
Ohio K24	50.2	— 2.3	37.0	40.6	73.0	14.7	64.5	.5	1.3
Ohio 3158	49.9	— 4.9	37.0	40.9*	71.9	16.5	65.8	2.8	2.9
Ohio M20	49.4	— 1.2	37.4*	43.0*	67.9*	14.5	63.5	1.5	2.0
Iowa 4059	48.9	— 6.2	34.9	40.7*	71.1	16.8	66.0	.7	2.7
Ohio 3157	47.3	— 4.6	33.2	39.3*	69.4	16.6	64.2	.2	1.9
Clarage	41.7	—16.9	35.0†	31.5‡	58.6†	18.3	70.3	21.7	3.6

*Four replications only.
†Three replications only.
‡Two replications only.

TABLE 15.—Adaptation Area 7. 1944

Experiment Number: 427, Ross County. The George C. Foster Farm cooperating

Entry	Acre grain yield	Yield above or below expected	Moisture in grain at harvest	Planting to silking	Root-lodged plants	Broken plants	Leaf blight
	Bu.	*Bu.*	*Pct.*	*Days*	*Pct.*	*Pct.*	*Score*
U. S. 239	108.8	+10.0	21.2	65.2	0.4	3.0	2.0
U. S. 379	107.0	+ 8.2	22.0	65.5	.0	1.3	1.2
Indiana 2906 (W)*	104.2	+ 5.4	21.7	66.0	.0	1.3	2.2
U. S. 419	103.1	+ 6.0	22.4	68.5	.4	2.2	1.5
Ohio 3190	102.7	+ 4.3	17.4	64.2	.0	2.2	2.2
U. S. 197 (W)	102.6	+ 5.0	20.0	68.0	.0	7.2	1.0
U. S. 418	101.9	+ 3.4	21.7	66.8	.0	6.3	2.2
Indiana 0904C (W)	101.0	+ 2.2	21.2	65.0	.8	1.7	3.0
Ohio 3132	100.7	+ 3.8	20.1	62.8	.0	.9	2.2
Kansas K1583	100.6	+ 7.5	23.6	71.0	.0	16.7	1.2
Indiana 750A (W)	99.0	+ .3	21.0	64.8	.0	.4	2.5
U. S. 404 (W)	98.7	+ 2.9	21.8	69.5	.4	5.6	1.8
Kansas K1585	98.3	+ 3.0	22.2	69.8	.0	4.2	1.2
U. S. 396	98.1	— .3	21.6	67.0	.0	3.1	2.2
Kansas K2234 (W)	96.9	— 1.5	23.5	67.0	.0	.0	2.2
U. S. 398	96.6	— 2.0	19.3	64.5	.0	1.3	3.0
Kentucky 203 (W)	96.5	— 2.2	21.3	66.2	.0	6.1	2.2
Ohio 3056	96.0	— 2.5	16.3	66.8	.4	.9	2.5
Ohio 3127	95.9	— 2.2	19.6	63.8	.0	2.6	1.5
U. S. 438	95.6	— 2.8	21.2	67.0	.4	4.4	2.0
Kentucky 205 (W)	95.0	— 2.4	21.3	68.2	.0	8.6	2.2
U. S. 474	94.8	— 3.3	17.9	63.8	.0	4.5	1.8
Ohio L89	94.6	— 4.2	19.0	66.0	.0	8.7	3.2
U. S. 199 (W)	94.6	— 2.5	21.2	68.2	.0	3.7	1.5
U. S. 493W (W)	94.4	— 1.4	20.7	69.5	.4	4.3	1.8
Kansas K2275 (W)	94.0	— 4.4	19.9	67.0	.9	5.1	2.0
U. S. 496W (W)	93.2	— 2.1	21.3	69.8	.0	2.7	1.5
U. S. 472 (W)	92.8	— 4.3	19.6	68.5	1.8	2.2	1.5
Ohio 3189	92.5	— 6.2	18.2	64.8	.0	1.3	3.2
U. S. 13	92.5	— 5.3	18.8	63.5	.9	2.2	3.0
U. S. 360 (W)	91.8	— 6.0	19.9	67.8	1.3	3.4	2.5
U. S. 405	91.7	— 6.3	19.5	67.5	5.8	3.2	2.5
U. S. 479	91.4	— 4.8	22.8	69.2	1.7	3.0	2.8
U. S. 424	90.2	— 6.5	20.9	68.8	.8	5.1	2.0
U. S. 497W (W)	86.2	— 5.3	22.6	71.8	.0	4.5	.8
White Dent (Foster)	85.8	— 9.5	20.3	69.8	1.4	5.1	2.5

Leaf-blight score: None = 0; light = 1; heavy = 5.
*White entries are indicated by the letter (W) following the entry designations.

RECOMMENDATIONS FOR OHIO CERTIFIED CORN HYBRIDS

The recommendations in table 16 are for grain production and are based not only upon the tests reported in this circular but also upon many previously conducted tests and observations. The list does not necessarily include all good hybrids being offered for sale in Ohio. It includes those hybrids that have good records of performance, whose pedigrees are published, and for which the procedures in seed production can be inspected and passed upon by the Ohio Seed Improvement Association.

For silage, one should use a high-yielding grain hybrid 1 to 2 weeks later in maturity than those recommended for grain production. U. S. 13 and Ohio L94 are widely used for silage.

Since soil productivity, seasonal conditions, and management practices influence the time required for any hybrid to reach maturity, the terms "early", "midseason", and "full-season" as used here apply to good corn land in an average season. Earlier or later hybrids than those recommended may be desired for special conditions. The relative length of the growing period is indicated by the letters in the hybrid name, M, K, W, C, and L, from earliest to latest. The average difference in seasonal requirement between each letter group is approximately 3 days; that is, M hybrids reach maturity about 6 days earlier than W hybrids grown under the same conditions.

Fig. 2.—Adaptation areas for corn hybrids in Ohio (Revised January 1942)

By the Agricultural Extension Service of The Ohio State University, the Ohio Agricultural Experiment Station, and the Bureau of Plant Industry, Agricultural Research Administration, United States Department of Agriculture

TABLE 16.—Recommendations of Ohio Certified Hybrids

Adaptation area (see map)	Seasonal requirement		
	Early	Midseason	Full-season
I		Ohio M34 Ohio M20 Ohio M15	Ohio K24 Ohio K23 Ohio K35
II and III	Ohio M34 Ohio M20 Ohio M15	Ohio K35 Ohio K24 Ohio K23	Ohio W36 Pioneer 311A Ohio W17 Iowa 939* Ohio W30 Ohio W10 Ohio W46
IV	Ohio K24 Ohio K23 Ohio K35	Ohio W36 Pioneer 311A† Ohio W17† Iowa 939* Ohio W30 Ohio W10 Ohio W46	Ohio C38 Ohio C12 Iowa 4059*
V	Ohio W10 Pioneer 311A† Ohio W17† Iowa 939* Ohio W36 Ohio W30	Ohio C38 Ohio C12 Iowa 4059*	Ohio L86 U. S. 13
VI	Ohio W10 Iowa 939* Ohio W36	Ohio C12† Ohio C38 Iowa 4059*	U. S. 13 Ohio L86
VII	U. S. 13	U. S. 379 Indiana 750A (white)	Kentucky 203 (white)

*Avoid where the European corn borer is a serious hazard.
†Avoid where leaf blight is a serious hazard.

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